MONTGOMERY WATSON

Work Plan for Post-Remediation Confirmation Soil Sampling Parcel A

McDonnell Douglas C-6 Facility
Los Angeles, California

February 1997

WORK PLAN FOR POST-REMEDIATION CONFIRMATION SOIL SAMPLING PARCEL A

McDONNELL DOUGLAS C-6 FACILITY LOS ANGELES, CALIFORNIA

February 1997

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SECTION 1.0

INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

In October, 1996, Montgomery Watson (Montgomery) was retained by McDonnell Douglas Realty Company (MDRC) to assist with the redevelopment of Parcel A (the "Site") of their C-6 facility located in Los Angeles, California. Figure 1 presents the C-6 facility. Figure 2 delineates the Site. Information gathered during the data compilation and evaluation phase of this project indicated historical industrial activities at the Site may have released petroleum products and hazardous substances to the subsurface.

This Work Plan presents the sampling and analytical protocols for the final post-remediation confirmation soil sampling at the Site. The purpose of the confirmation soil sampling is to verify that soil quality to the depth of 4 feet below ground surface (bgs) has met the prescribed preliminary remediation goals (PRGs) set for the Site.

The number of sample locations and types of analytical methods outlined in this Work Plan are based on available historical information for the different areas of concern. An overview of the confirmation soil sampling program is provided in Subsection 1.4.

1.2 SITE DESCRIPTION AND HISTORY

The McDonnell Douglas C-6 facility is located at 19503 South Normandie Avenue, in the city of Los Angeles, California. This 170-acre property is bounded to the north by 190th Street, to the south by the former Montrose Chemical facility, to the east by South Normandie Avenue, and to the west by the former Industrial Light Metals (ILM) facility.

The C-6 facility was farmland prior to the 1940s. The C-6 facility was first developed by the Defense Plant Corporation in 1941 as part of an aluminum production plant. The plant was operated by the Aluminum Company of America until late 1944. In 1948, the property was acquired by the Columbia Steel Company. In March 1952, the U.S. Navy purchased the property from the Columbia Steel Company and established Douglas Aircraft Company (DAC) as the contractor and operator of the facility for the manufacturing of aircraft and aircraft parts. DAC purchased the C-6 facility from the U.S. Navy in 1970.

Manufacturing continued at the C-6 facility until 1992, when operations shifted to storage only. McDonnell Douglas elected to terminate operations at the C-6 facility in 1996 and redevelop the property for other uses. The facility will be redeveloped in phases, beginning with the Site, which is the subject of this Work Plan.

The Site consists of the northernmost quarter of the C-6 facility, encompassing approximately 50 acres. The Site was occupied by the following buildings, each surrounded by pavement: Buildings 29, 33, 34, 36, 37, 41, 45, 57, 58, 61, 66-A and 67. These buildings have since been demolished, the pavement torn up, and the Site graded. The northern end of the parking lot, which has been torn up and graded; the northernmost section of Building 1, which is still standing; two 5,000-barrel aboveground storage tanks (ASTs), which are still standing; and Building 43/44 (the pump house between the two ASTs), which is still standing, also occupy the Site. A detailed description of the historical uses of the former buildings at the Site is provided in Section 3.

Based on historical information, the following areas of concern at the Site have been identified and are addressed in this Work Plan:

- Building 29
- Building 33
- Building 34
- Building 36
- Building 37
- Building 41
- Building 45
- Building 57
- Building 58
- Building 61
- Building 66-A Cleaning Area
- Building 67
- Parking Lot
- Hazardous Waste Storage Yard and Accumulation Area
- Northernmost Section of Building 1
- 5,000-Barrel Aboveground Storage Tanks and Building 43/44*
- Facility Storm Sewer Outfall

* Based on historical records, this building appears to have changed designations over time.

Additionally, Site-wide post-remediation confirmation sampling will be implemented to provide a higher level of confidence that shallow soil conditions have met the prescribed the PRGs set for the Site.

1.3 LOCAL GEOLOGY AND HYDROGEOLOGY

According to Bulletin No. 104-Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County (California Department of Water Resources, 1961), the Site is located in the Torrance Plain of the Los Angeles Coastal Plain groundwater basin. Subsurface sediments in this region consist of Recent alluvial deposits of gravel, sand, clay, and silt to the depth of approximately 175 feet bgs.

According to data from the ongoing groundwater monitoring program at the facility, the Site is underlain by interbedded fine- to medium-grained sand, silty sand, and clayey sand to the depth of at least 140 feet.

According to Bulletin No. 104, the Site is underlain by the Bellflower Aquiclude in the upper 100 feet bgs, and by the Gage Aquifer from approximately 110 to 160 feet bgs. Deeper water-bearing zones beneath the Site include the Lynwood Aquifer, from approximately 300 to 390 feet bgs, and the Silverado Aquifer, from approximately 400 to 670 feet bgs. The Silverado Aquifer is utilized as a source of drinking water.

Groundwater monitoring data show the depth to first groundwater beneath the Site is approximately 65 feet bgs. Shallow groundwater flow direction is generally to the southeast, with a gradient of 0.001 foot/foot.

1.4 OVERVIEW OF POST-REMEDIATION CONFIRMATION SAMPLING PROGRAM

A two-tiered post-remediation confirmation sampling program will be implemented:

Tier I	Point Source Confirmation
Tier II	Site-Wide Assurance

Tier I: Point Source Post-Remediation Confirmation

For each of the former buildings and other utilized areas on the Site, available historical information has been reviewed to identify former usage and potential chemicals of concern. Tier 1 confirmation soil sampling locations are based on the surveyed locations of former items of concern (above- and belowground tanks, pits, clarifiers, etc.). Based on association with each item of concern, soil samples will be analyzed for potential chemicals of concern from the following suite of analyses:

- Total Recoverable Petroleum Hydrocarbons (TRPH): EPA Method 418.1
- Volatile Organic Compounds (VOCs): EPA Method 8260
- Semivolatile Organic Compounds (SVOCs): EPA Method 8270
- Pesticides/PCBs: EPA Method 8080
- Title 22 Metals: EPA Method 7000
- Gamma Spectroscopy (14 radioisotopes): EPA Method 901.1

Tier II: Site-Wide Post-Remediation Assurance

To gain a higher level of confidence that shallow soil conditions have met the prescribed PRGs set for the Site, a Site-wide assurance sampling program will be implemented. Site-

wide assurance soil samples will be analyzed for the following suite of potential chemicals of concern:

- Total Recoverable Petroleum Hydrocarbons (TRPH): EPA Method 418.1
- Volatile Organic Compounds (VOCs): EPA Method 8260
- Semivolatile Organic Compounds (SVOCs): EPA Method 8270
- Title 22 Metals: EPA Method 7000

Section 2

SECTION 2.0

FIELD METHODS

This section describes the field methods that will be implemented during this post-remediation confirmation sampling program.

2.1 FIELD SAMPLING

A Site Safety and Health Plan (SSHP) has been prepared for this project. All persons working on this project will be required to follow the procedures outlined in the SSHP.

Soil samples will be collected using the hand auger method to advance a borehole. Each boring will be advanced to the depth of 3.5 feet bgs. Soil samples will be collected from each boring at depth intervals of 1.5 to 2 feet bgs, and 3.5 to 4 feet bgs, using a hand sampler lined with clean, unused stainless steel sample sleeves.

The ends of each sample sleeve will be covered with Teflon patches and secured with plastic caps. A discrete sample ID will be demarcated with indelible ink on a sample label and affixed to the sample sleeve. Sample sleeves will be placed in plastic bags, and put in a cooler with blue ice. The samples will be transported to a State-certified laboratory for analysis under chain-of-custody protocol.

Soil samples that are collected for radioisotope analysis will be collected using a stainless steel utensil to transfer soil cuttings from the depths of 1.5 to 2.0 feet, and 3.5 to 4.0 feet into 8-ounce glass jars supplied by the laboratory. The jars will be filled to capacity and secured with a threaded lid. A discrete sample ID will be demarcated with indelible ink on each glass jar. Sample jars will be placed in plastic bags, and put in a cooler with blue ice. The samples will be transported to a State-certified laboratory for analysis under chain-of-custody protocol.

2.2 QUALITY ASSURANCE SAMPLING

Standard laboratory quality assurance/quality control procedures will be followed. In addition, two types of quality assurance samples will be collected as described below.

One trip blank will be placed in each cooler (approximately 7-gallon capacity) with samples for each sampling day. The trip blank will consist of deionized water furnished by the laboratory. The trip blank will be analyzed for VOCs only.

One rinse blank per sampling crew per day, consisting of distilled water poured through a clean sample sleeve. The rinse blank(s) will be analyzed for:

- TRPH
- VOCs
- SVOCs
- Pesticides/PCBs
- Title 22 Metals

2.3 EQUIPMENT CLEANING

The downhole soil boring equipment will be cleaned between borings using an Alconox/potable water wash, a potable water rinse, and a distilled water rinse.

2.4 ABANDONMENT

The soil borings will be abandoned by backfilling with bentonite chips to ground surface and hydrating with potable water.

2.5 DISPOSAL

Soil sampling operations are anticipated to generate a small volume of cuttings and cleaning fluids.

Soil cuttings generated from hand augering will be drummed separately from cleaning fluids. Based on this sampling plan, approximately two drums of cuttings and two drums of cleaning fluids are anticipated to be generated. Drums will be labeled, sampled for waste characterization, and disposed of accordingly.

Section 3

SECTION 3.0

TIER I SAMPLING AND ANALYSIS

This section describes the Tier I point source post-remediation confirmation sampling program and is subdivided according to the former buildings and other utilized areas throughout the Site. Each subsection describes the history of the building or area, the potential chemicals of concern, and the planned sampling and analyses. The post-remediation confirmation soil boring locations are shown on Figures 3 - 18.

Depending on historical association with each item of concern, soil samples will be analyzed for some or all of the following analytes:

- TRPH
- VOCs
- SVOCs
- Pesticides/PCBs
- Title 22 Metals
- Radioisotopes

3.1 BUILDING 29

Historical Usage

The southern half of Building 29 was a machine and carpentry shop. The northern half was used for government property storage. Hazardous materials were stored in a painting area on the east side of the building. One clarifier was also located in the painting area; one clarifier was located outside the east wall of the building. Two former underground storage tanks (USTs), circa 1940s, were used to store diesel and fuel oil and were formerly located beneath the footprint of the building.

Potential Chemicals of Concern

Based on the historical usage of Building 29, the following potential chemicals of concern have been identified:

- Petroleum hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at each of two former UST locations. Soil samples will be analyzed for TRPH.
- One soil boring at each of two former clarifiers. Soil samples will be analyzed for TRPH, VOCs, SVOCs, and Title 22 Metals.

Figure 3 presents the post-remediation confirmation soil boring locations.

3.2 BUILDING 33

Historical Usage

Building 33 was a storage shed, used to store cyanide solutions.

Potential Chemicals of Concern

Based on the historical usage of Building 33, the following potential chemicals of concern have been identified:

- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring within the former building. Soil samples will be analyzed for Title 22 Metals.

Figure 4 presents the post-remediation confirmation soil boring locations.

3.3 BUILDING 34

Historical Usage

Building 34 was originally a commissary. Sometime during the 1970s, the building was converted into a machine shop and engineering offices. A concrete pad outside the north wall of the building was the location of clarifiers.

Potential Chemicals of Concern

Based on the historical usage of Building 34, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at the location of the former clarifiers. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals.

Figure 5 presents the post-remediation confirmation soil boring locations.

3.4 BUILDING 36

Historical Usage

Building 36 was formerly used as a paint and solvent storage area for the C-6 facility. The building was later used for the storage of used aircraft interiors. Four waste solvent and solvent storage USTs (Tanks 15T, 16T, 17T, and 18T) were located outside the south wall of Building 36. The USTs were removed in 1991. A clarifier was located outside the north wall of the building.

Potential Chemicals of Concern

Based on the historical usage of Building 36, the following potential chemicals of concern have been identified:

- Solvents
- Petroleum Hydrocarbons
- SVOCs
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at each of four former UST locations. Soil samples will be analyzed for VOCs.
- One soil boring at the location of the former clarifier. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals.

Figure 6 presents the post-remediation confirmation soil boring locations.

3.5 BUILDING 37

Historical Usage

Building 37 housed foundry operations in the south central portion of the building, and large machine presses and lathes throughout the building. Foundry and press machines were contained in 15 large pits (approximately 8 feet deep, 20 feet wide, and 60 feet long). A ground floor room on the east side of the building housed the tooling department where employees would produce parts for the machines throughout the facility. A parts cleaning tank sat in a sump within this room. Two clarifiers were located outside the east wall of the building. A hydraulically-powered elevator was located inside the northeast portion of the building.

Potential Chemicals of Concern

Based on the historical usage of Building 37, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring in each of the 15 machine pit areas. Soil samples will be analyzed for TRPH, SVOCs, and Title 22 Metals.
- One soil boring at the location of the former parts cleaning tank. Soil samples will be analyzed for VOCs and Title 22 Metals.
- One soil boring at the location of the former hydraulic elevator. Soil samples will be analyzed for TRPH and SVOCs.
- One soil boring at the location of each of two former clarifiers. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals.

Figure 7 presents the post-remediation confirmation soil boring locations.

3.6 BUILDING 41

Historical Usage

Building 41 was formerly a boiler house. Four boilers and two air compressors operated in this building. Two USTs (Tanks 19T and 20T) were used to store diesel fuel and were located outside the north wall of Building 41.

Potential Chemicals of Concern

Based on the historical usage of Building 41, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Three soil borings within the area of the former USTs and piping. Soil samples will be analyzed for TRPH.

Figure 8 presents the post-remediation confirmation soil boring locations.

3.7 BUILDING 45

Historical Usage

Building 45 was a hazardous waste accumulation area for the facility. Hazardous waste disposal was contracted by DAC to an outside vendor who was responsible for the maintenance of the area.

Potential Chemicals of Concern

Based on the historical usage of Building 45, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Pesticides/PCBs
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Three soil borings within the former building. Soil samples will be analyzed for TRPH, VOCs, SVOCs, Pesticides/PCBs, and Title 22 Metals.

Figure 9 presents the post-remediation confirmation soil boring locations.

3.8 BUILDING 57

Historical Usage

Building 57 was only used for aircraft parts storage; no manufacturing activities were conducted in this building.

Potential Chemicals of Concern

Because no historical manufacturing activities were conducted in Building 57, there are no potential chemicals of concern associated with it.

Post-Remediation Confirmation Soil Sampling and Analysis

Because there are no potential chemicals of concern associated with this building, no point-source confirmation soil sampling and analysis will be implemented. This building area will be addressed in the Tier II Site-Wide Assurance Sampling Program.

3.9 BUILDING 58

Historical Usage

Building 58 was a steel-frame lean-to building. It was used for motor vehicle storage and maintenance operations.

Potential Chemicals of Concern

Based on the historical usage of Building 58, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Four soil boring locations within the former building. Soil samples will be analyzed for TRPH, VOCs, and Title 22 Metals.

Figure 10 presents the post-remediation confirmation soil boring locations.

3.10 BUILDING 61

Historical Usage

Building 61 housed plastic parts manufacturing operations. Three hydraulically-powered elevators were located in the north, central, and south portions of the building. A sump was located outside the northeast portion of the building. A clarifier was located outside the east wall of the building.

Potential Chemicals of Concern

Based on the historical usage of Building 61, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at each of the three former elevator locations. Soil samples will be analyzed for TRPH.
- One soil boring at the location of the former sump. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals.
- One soil boring at the location of the former clarifier. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals

Figure 11 presents the post-remediation confirmation soil boring locations.

3.11 BUILDING 66-A CLEANING AREA

A concrete slab to the west of Building 66-A was a cleaning area. The cleaning area drained to a sludge tank to the north.

Potential Chemicals of Concern

Based on the historical usage of the Building 66-A cleaning area, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at the location of the former sludge tank north of the cleaning area. Soil samples will be analyzed for TRPH, VOCs, SVOCs, and Title 22 Metals.

Figure 12 presents the post-remediation confirmation soil boring locations.

3.12 BUILDING 67

Historical Usage

Building 67 housed aircraft parts finishing processes and inspection. A pit in the southeast corner of the building contained a machine which used high voltage electricity and dielectric oils to remove machine burrs from aircraft parts.

A room located in the west central section of the building contained a parts treatment process line, consisting of five dip tanks and a large solvent degreasing bath. The dip tanks contained rinse solutions and treatment baths such as sodium chromate and sulfuric acid. The solvent degreasing bath used 1,1,1-TCA, and sat in a pit.

Two x-ray booths and darkroom facilities were located in the east central section of the building. A room on the east side of the building housed several large air compressors. Three additional machine pits were located inside the northeast corner of the building. Two clarifiers and six abandoned cooling towers were located outside the west wall, northeast and southeast corners of the building.

Potential Chemicals of Concern

Based on the historical usage of Building 67, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals
- PCBs
- Radioisotopes

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at the location of the former pit in the southeast corner of the building. Soil samples will be analyzed for TRPH, VOCs, SVOCs, and Title 22 Metals and PCBs.
- One soil boring at the location of the former dip tanks. Soil samples will be analyzed for VOCs and Title 22 Metals.
- One soil boring at the location of the former solvent degreasing bath. Soil samples will be analyzed for VOCs and Title 22 Metals.

- One soil boring at the location of the former x-ray booth and darkroom facilities. Soil samples will be analyzed for Title 22 Metals and radioisotopes.
- One soil boring at the location of the former air compressors. Soil samples will be analyzed for TRPH.
- One soil boring at the location of each of three former pits inside the northeast corner of the building. Soil samples will be analyzed for TRPH, VOCs, SVOCs, and Title 22 Metals.
- One soil boring at the location of each of two former clarifiers. Soil samples will be analyzed for TRPH, VOCs, SVOCs and Title 22 Metals.
- One soil boring at the location of each of six former cooling towers. Soil samples will be collected and analyzed for TRPH and Title 22 Metals.

Figure 13 presents the post-remediation confirmation soil boring locations.

3.13 PARKING LOT

Historical Usage

The parking lot was only used for employee parking; no other structures or industrial activities occupied the area.

Potential Chemicals of Concern

Based on the historical usage of the parking lot, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons (gasoline, diesel, motor oil)
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Six soil borings at locations within the former parking lot. Soil samples will be analyzed for TRPH and Title 22 Metals.

Figure 14 presents the post-remediation confirmation soil boring locations.

3.14 HAZARDOUS WASTE STORAGE YARD AND ACCUMULATION AREA

Historical Usage

The paved yard between Building 29 and Building 1, was used for hazardous materials and hazardous waste storage. A concrete pad with a containment curb at the northeast corner of the yard was also used as a hazardous waste accumulation area.

Potential Chemicals of Concern

Based on the historical usage of the hazardous waste storage yard and accumulation area, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Four soil borings within the former area. Soil samples will be analyzed for TRPH, VOCs, SVOCs, and Title 22 Metals.

Figure 15 presents the post-remediation confirmation soil boring locations.

3.15 NORTHERNMOST SECTION OF BUILDING 1

Historical Usage

The northernmost section of Building 1 was a storage area for magnetic computer tapes. An electrical transformer station was located on a mezzanine level, accessible by ladder. The transformers were labeled as containing PCBs. A 130-gallon diesel UST was located outside the west wall of the northernmost section of Building 1.

Potential Chemicals of Concern

Based on the historical usage of the northernmost section of Building 1, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- PCBs
- Metals

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- One soil boring at the location of the former UST. Soil samples will be analyzed for TRPH.
- One soil boring at the location of the former mezzanine and transformers. Soil samples will be analyzed for PCBs and Title 22 Metals.

Figure 16 presents the post-remediation confirmation soil boring locations.

3.16 5,000-BARREL ABOVEGROUND STORAGE TANKS AND BUILDING 43/44

Historical Usage

The two 5,000-barrel ASTs in the eastern portion of the Site were previously used for diesel oil storage. They are currently used to store water for the facility's fire suppression system. Piping ran from the east and west to a fuel transfer station, located southwest of Building 43/44 (the pump house between the two ASTs), and between the pump house and Building 41, along the railroad spur.

Potential Chemicals of Concern

Based on the historical usage of the two 5,000-barrel ASTs, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Five soil borings at locations along the ASTs, Building 43/44, and former piping. Soil samples will be analyzed for TRPH.

Figure 17 presents the post-remediation confirmation soil boring locations.

3.17 FACILITY STORM SEWER OUTFALL

Historical Usage

A small shed near the northeast corner of the Site provides access to the sanitary sewer. To the east of the shed is the facility storm drain outfall to the storm sewer system. Employees would periodically turn on a skimmer pump to remove any oil from the top of the sump. The fluids were pumped to the surface for further polishing in an oil-water separator.

Potential Chemicals of Concern

Based on the historical usage of the facility storm sewer outfall, the following potential chemicals of concern have been identified:

- Petroleum Hydrocarbons
- SVOCs
- Solvents
- Metals
- Pesticides/PCBs

Post-Remediation Confirmation Soil Sampling and Analysis

To verify that soil remediation has met the prescribed PRGs, soil samples will be collected and analyzed from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet bgs according to the following soil boring and analytical schedule:

- Two soil borings at locations adjacent to the facility storm sewer outfall. Soil samples will be analyzed for TRPH, VOCs, SVOCs, Pesticides/PCBs, and Title 22 Metals.

Figure 18 presents the post-remediation confirmation soil boring locations.

Section 4

MONTGOMERY WATSON

SECTION 4.0

TIER II SAMPLING AND ANALYSIS

Tier II sampling is designed to raise the level of confidence that shallow soil quality throughout the entire Site has met the prescribed PRGs set for the Site. The Site has been divided into grid segments of approximately 1-acre in area as presented in Figure 19. One sample location will be placed in the center of each grid segment as presented in Figure 19.

Soil samples will be collected at each location from the depths of 1.5 to 2.0 feet and 3.5 to 4.0 feet following the procedures outlined in Section 2.0. Soil samples will be analyzed for the entire suite of chemicals associated with the Site which may be of potential concern. The samples will be analyzed for the following chemicals:

- TRPH
- VOCs
- SVOCs
- Title 22 Metals

Section 5

MONTGOMERY WATSON

SECTION 5.0

EVALUATION AND REPORTING

The following number of samples are scheduled for collection during this post-remediation confirmation sampling program:

	TRPH	VOCs	SVOCs	Pest/PCBs	Title 22 Metals	Radioisotopes
Number of Tier I Analyses	142	70	80	14	122	2
Number of Tier II Analyses	54	54	54	0	54	0
TOTAL	196	124	134	14	176	2

A report will be prepared summarizing the confirmation soil sampling and analytical results. Comparisons to the prescribed PRGs will be included. The report will include, among other items, an introduction, description of field methods, quality assurance/quality control procedures, analytical results, and conclusions. All soil boring locations will be depicted on Site maps. Field notes and laboratory reports will be included as appendices.

Section 6

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SECTION 6.0

BIBLIOGRAPHY

Aluminum Company of America, Fuel Storage Tanks-Their Location, May 3, 1943.

California Department of Water Resources, Bulletin No. 104-Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, 1961.

Camp Dresser & McKee, Inc., Phase II Environmental Assessment of the Douglas Aircraft Company C-6 Facility, Parking Lot and Tool Storage Yard, Los Angeles, CA, August 21, 1991.

Crosby & Overton Environmental Management, Inc., Site Assessment Investigation for Underground Tanks Removed at Douglas Aircraft Company C6 Facility, 19503 South Normandie Avenue, Torrance, California, February 8, 1988.

Crosby & Overton Environmental Management, Inc., Excavation of Hydrocarbon Contaminated Soil, Soil Sampling and Analysis at C-6, Torrance, California, October 26, 1988.

Environmental Science & Engineering, Inc., Report of Soil Investigation and Removal, McDonnell Douglas Corporation, Douglas Aircraft Company Building No. 61, Torrance, California, November 9, 1995.

James M. Montgomery Consulting Engineers, Inc. (now Montgomery Watson), Feasibility Study Report, Soil and Groundwater Remediation at the Torrance (C6) Facility, November 1992.

Kennedy/Jenks Consultants, Phase I Environmental Assessment, Parcel A, March 20, 1996.

Kennedy/Jenks Consultants, Final Phase II Subsurface Investigation, Douglas Aircraft Company C-6 Facility, Parcel A, Torrance, California, June 5, 1996.

Kennedy/Jenks Consultants, Supplemental Subsurface Investigation, Douglas Aircraft C-6 Facility, Torrance, California, August 14, 1996.

Maness Environmental Services, Report: Underground Storage Tank Removal, McDonnell Douglas Corporation, 19503 South Normandie Avenue, Torrance, California, August 22, 1994.

Tait & Associates, Inc., ALTA/ACSM Land Title Survey, February 14, 1996.

Tait & Associates, Inc., Demolition Plan-Phase I, May 21, 1996.

U.S. Navy Industrial Reserve Aircraft Plant-Douglas Aircraft Company, Inc., Master Shore Station Development Plan: Area Development Plan...Fuel Oil and Gasoline, January 14, 1959 (date microfilmed).

Woodward-Clyde Consultants, Status Report on Leak Investigation at Tanks 19T and 20T at Douglas Aircraft Company's Los Angeles Facility, December 18, 1986.

Woodward-Clyde Consultants, Phase I Underground Tank Leak Investigation Report for Douglas Aircraft Company's C6 Facility, Los Angeles, California, June 1987.

Woodward-Clyde Consultants, Interim Report on Phase II of the Subsurface Investigation at Tanks 19T and 20T at the C6 Facility, November 18, 1987.

Woodward-Clyde Consultants, Phase III Drilling Program at Douglas Aircraft Company's Torrance (C6) Facility, December 16, 1987.

Woodward-Clyde Consultants, Final Report on Phase II of the Subsurface Investigation at Tanks 19T and 20T at the C6 Facility: Revised 10 May 1988, May 10, 1988.

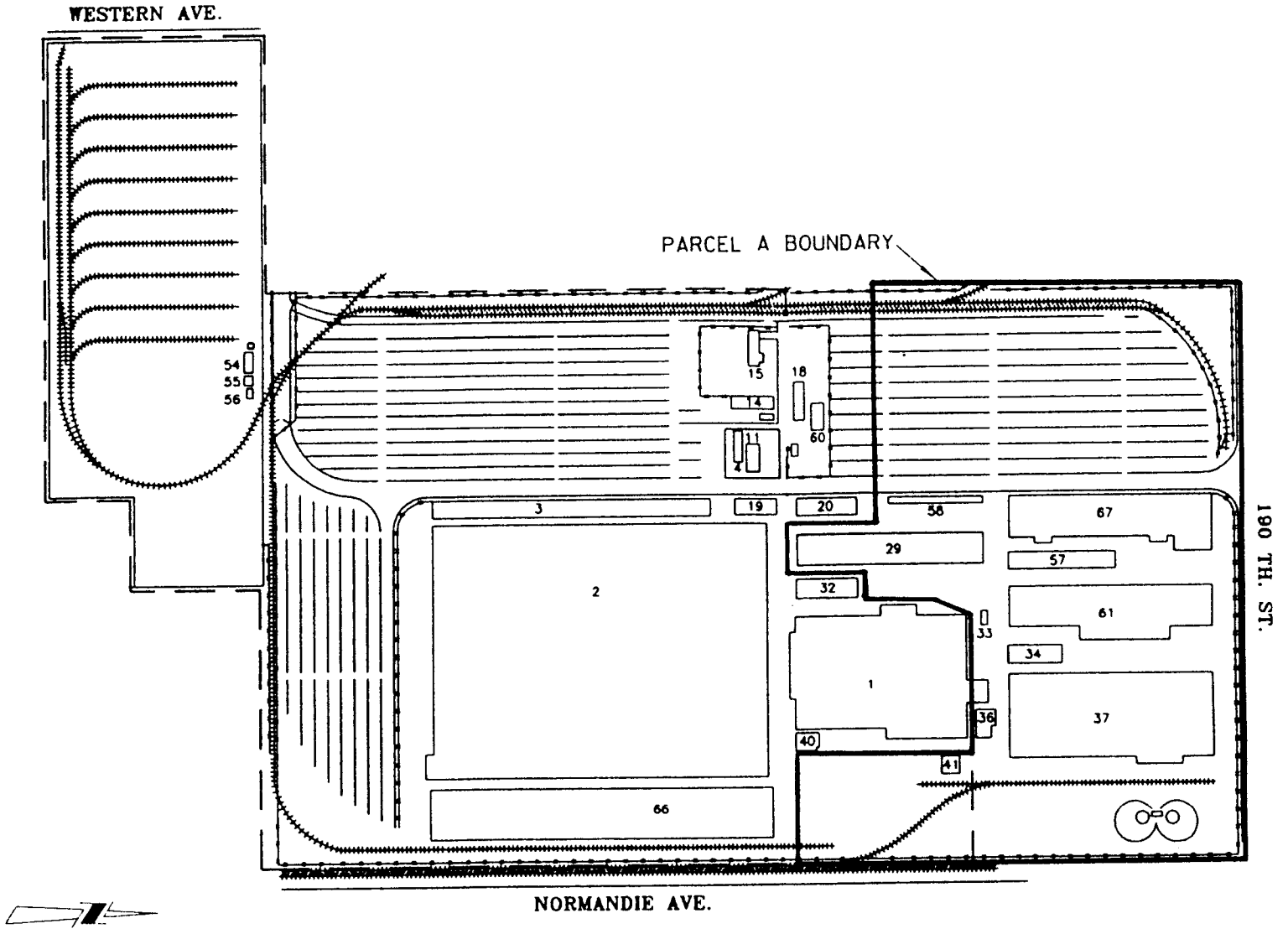
Woodward-Clyde Consultants, Douglas Aircraft Company Torrance (C6) Facility, Phase III Groundwater and Soil Investigation Report, March 1990.

Figures

MONTGOMERY WATSON

C-6 FACILITY MAP

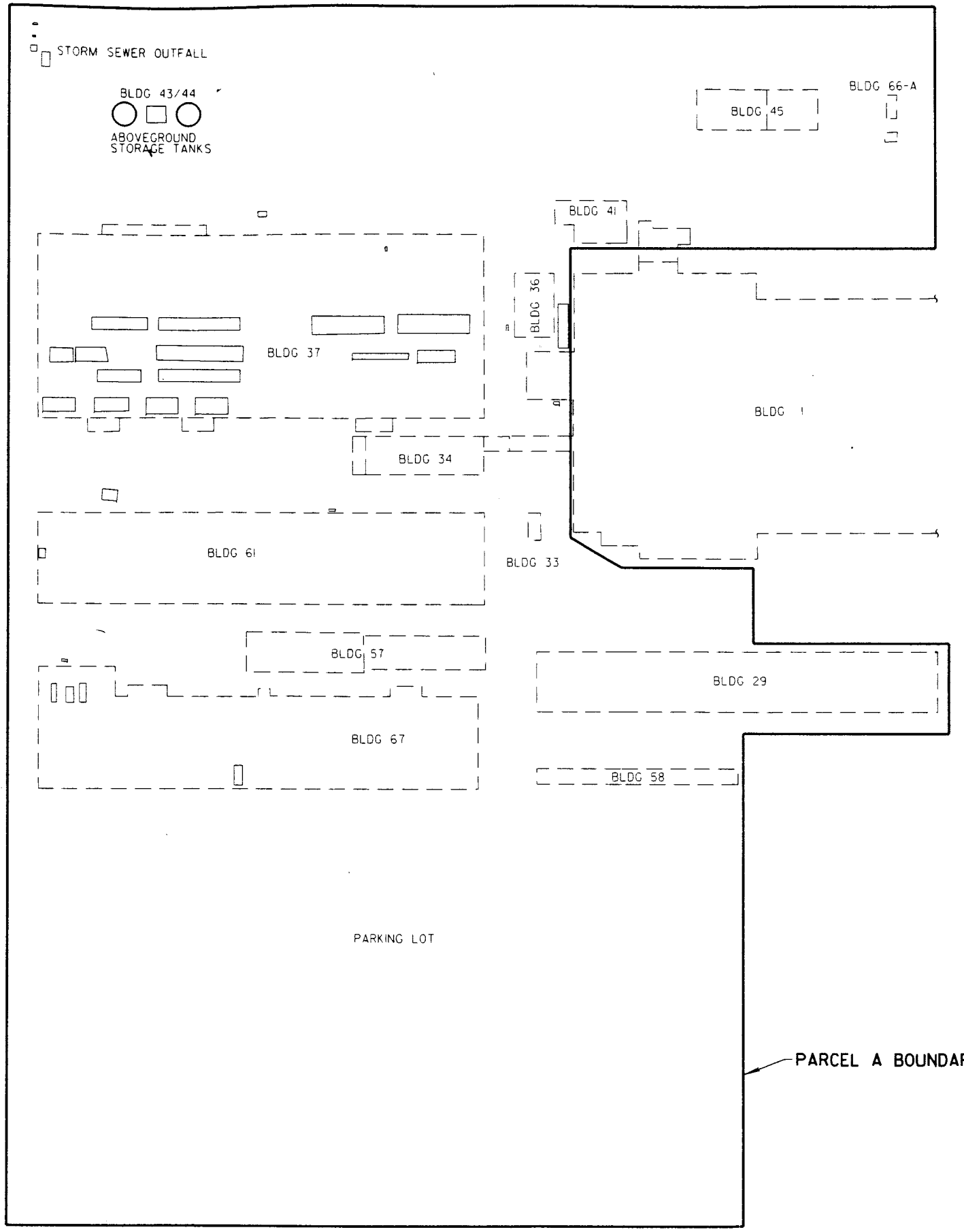
FIG. 1

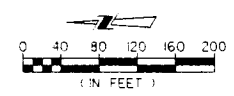


0 600 1200

Approximate Scale: 1"=600'

Base map developed from Facility Layout and Subject Property Map by Kennedy/Jenks Consultants, May 1996.





BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

JOB NO. _____ FILE NO. _____

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

DESIGNED _____
DRAWN N. CHRAKIAN
CHECKED S. REINERS

SUBMITTED
PROJECT ENGINEER _____ R. C. E. NO. _____ DATE _____
RECOMMENDED
MONTGOMERY WATSON _____ R. C. E. NO. _____ DATE _____

MONTGOMERY WATSON
Pasadena, California

APPROVED _____ 2/5/97 DATE
APPROVED _____ DATE

MCDONNELL DOUGLAS C-6 FACILITY
PARCEL A
SITE MAP

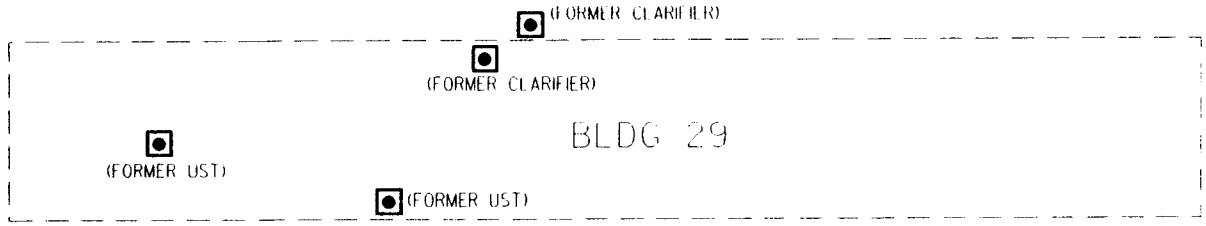
SHEET FIG. 2 OF • SHEETS

BOE-C6-0019998

MONTGOMERY WATSON

BUILDING 29 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.3



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

0 40 80 120 160 200
(IN FEET)

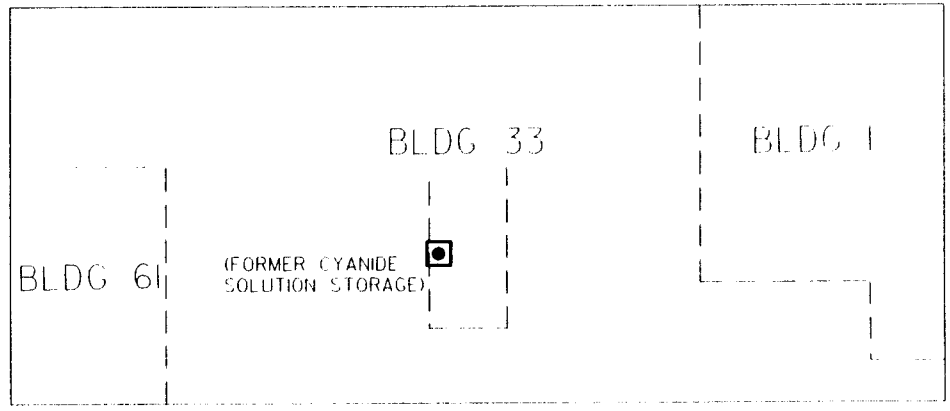
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

BOE-C6-0019999

MONTGOMERY WATSON

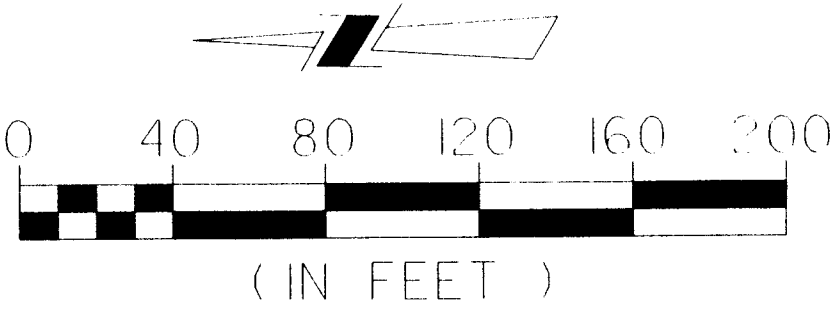
BUILDING 33 POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.4



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION



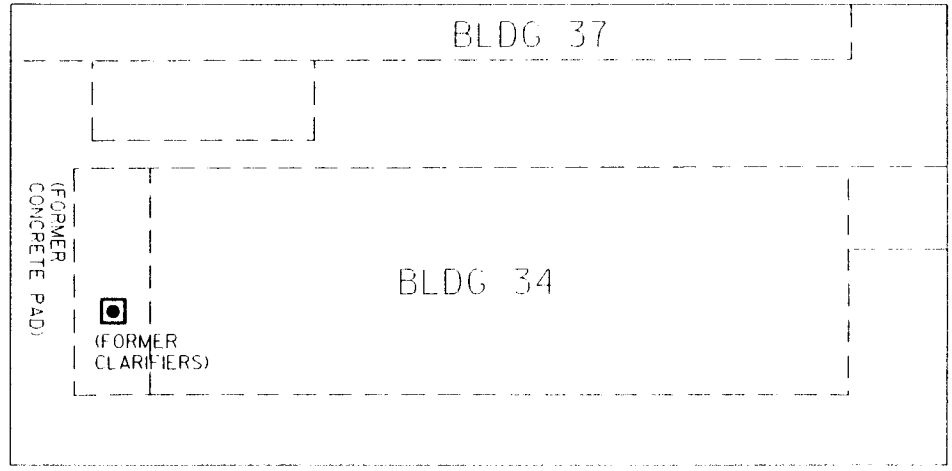
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020000

MONTGOMERY WATSON

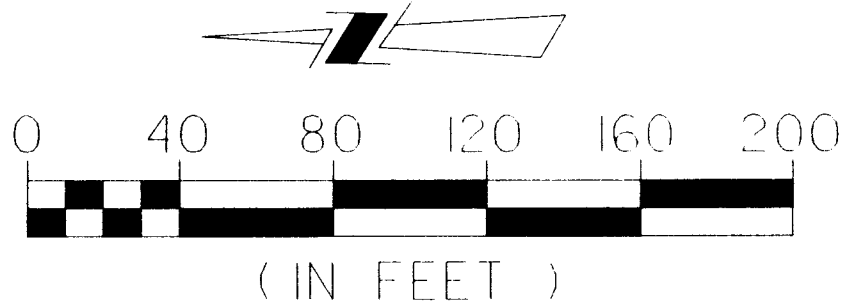
BUILDING 34 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.5



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION



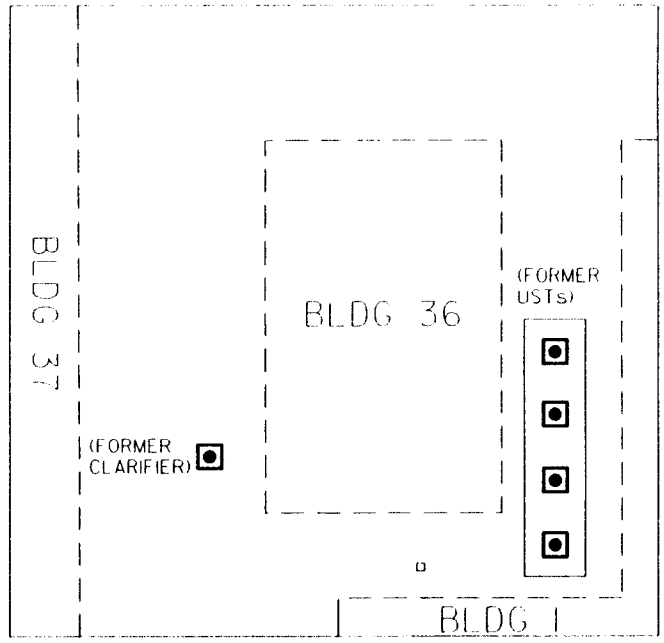
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020001

MONTGOMERY WATSON

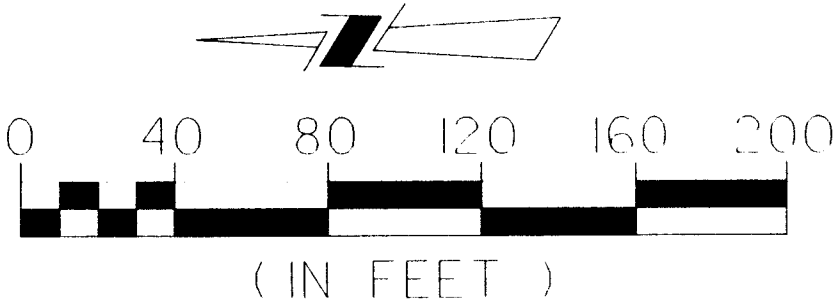
BUILDING 36 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.6



LEGEND:

▣ PROPOSED SOIL BORING LOCATION

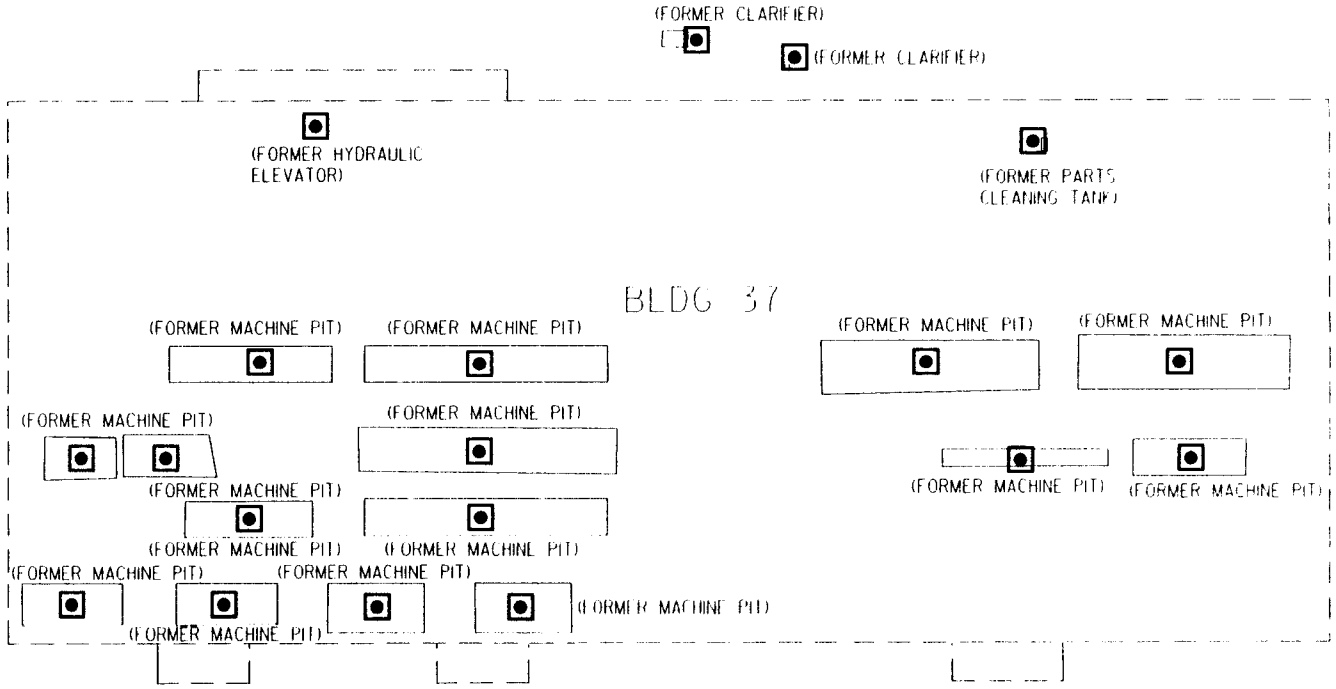


BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

MONTGOMERY WATSON

BUILDING 37 POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.7



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

0 40 80 120 160 200

(IN FEET)

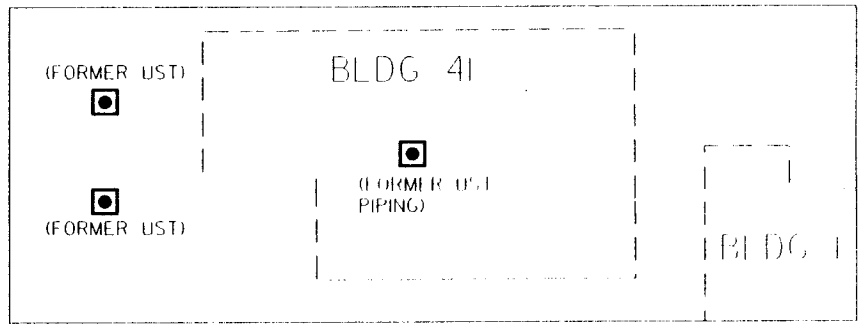
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020003

MONTGOMERY WATSON

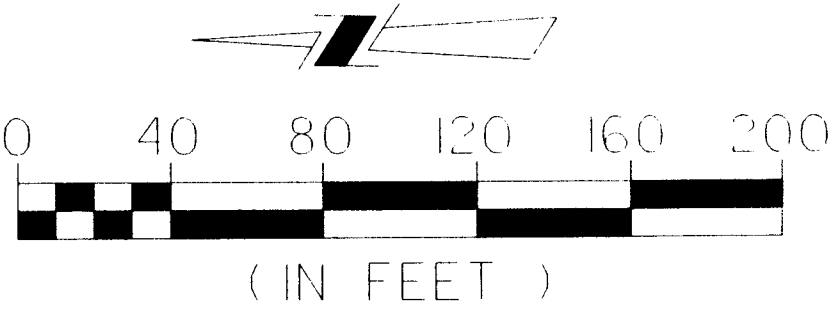
BUILDING 41 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.8



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION



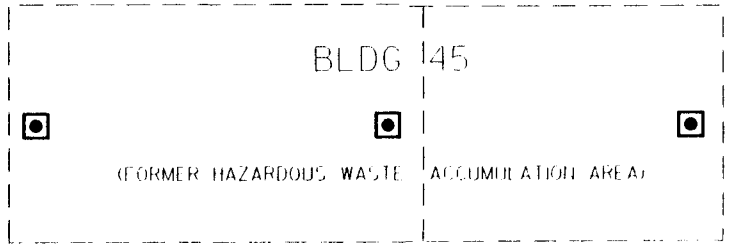
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020004

MONTGOMERY WATSON

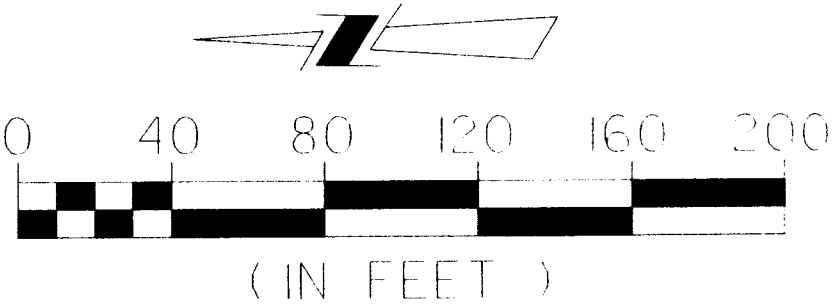
BUILDING 45 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.9



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION



BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

MONTGOMERY WATSON

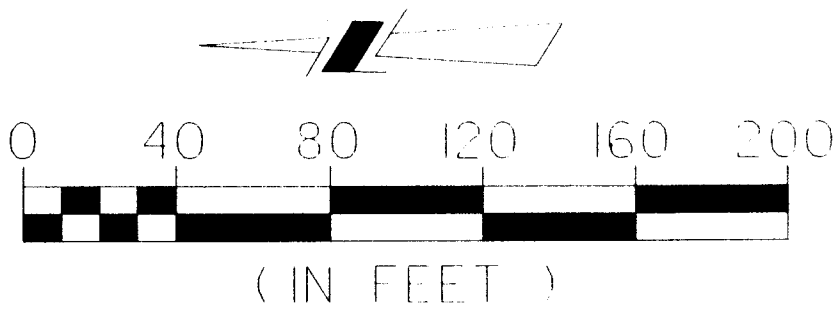
BUILDING 58 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.10

(FORMER MOTOR VEHICLE STORAGE AND MAINTENANCE OPERATIONS)

LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

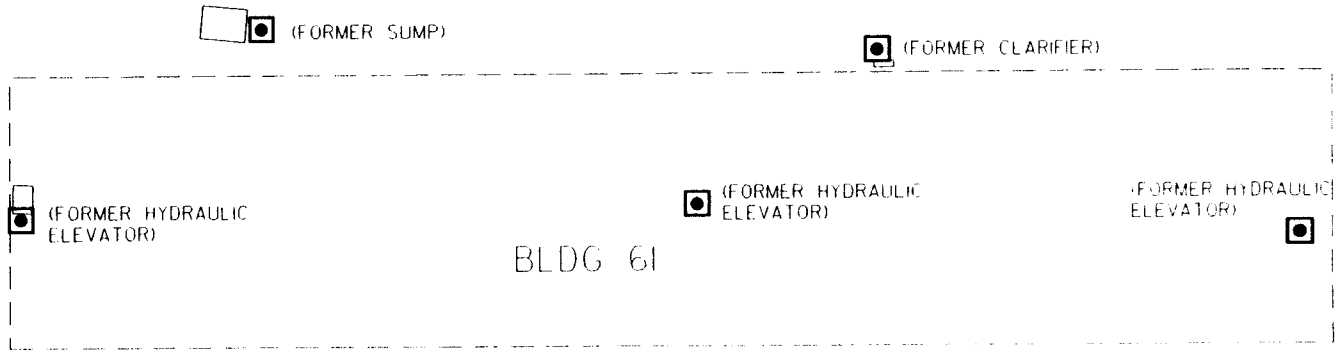


BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

MONTGOMERY WATSON

BUILDING 61 POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.11



LEGEND:

PROPOSED SOIL BORING LOCATION

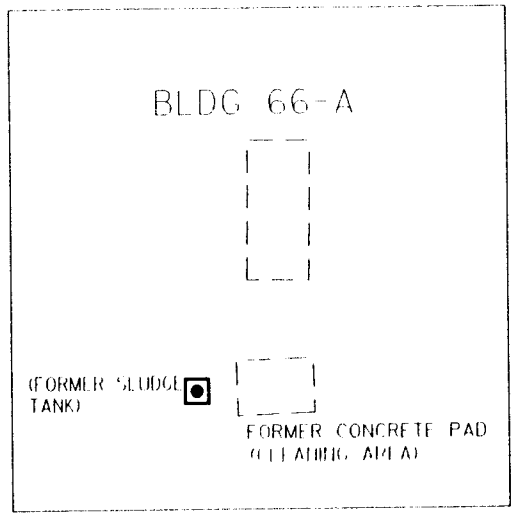
0 40 80 120 160 200
(IN FEET)

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

MONTGOMERY WATSON

BUILDING 66-A POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

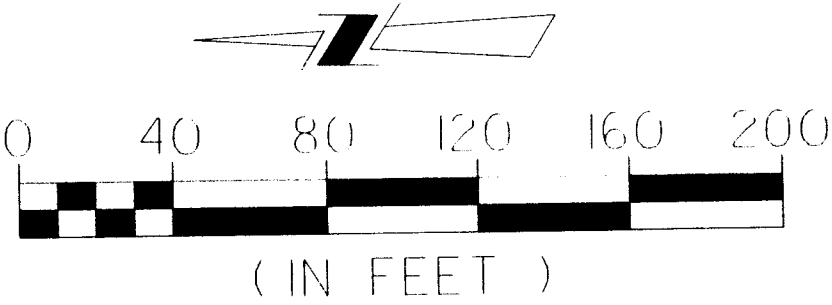
FIG.12



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.



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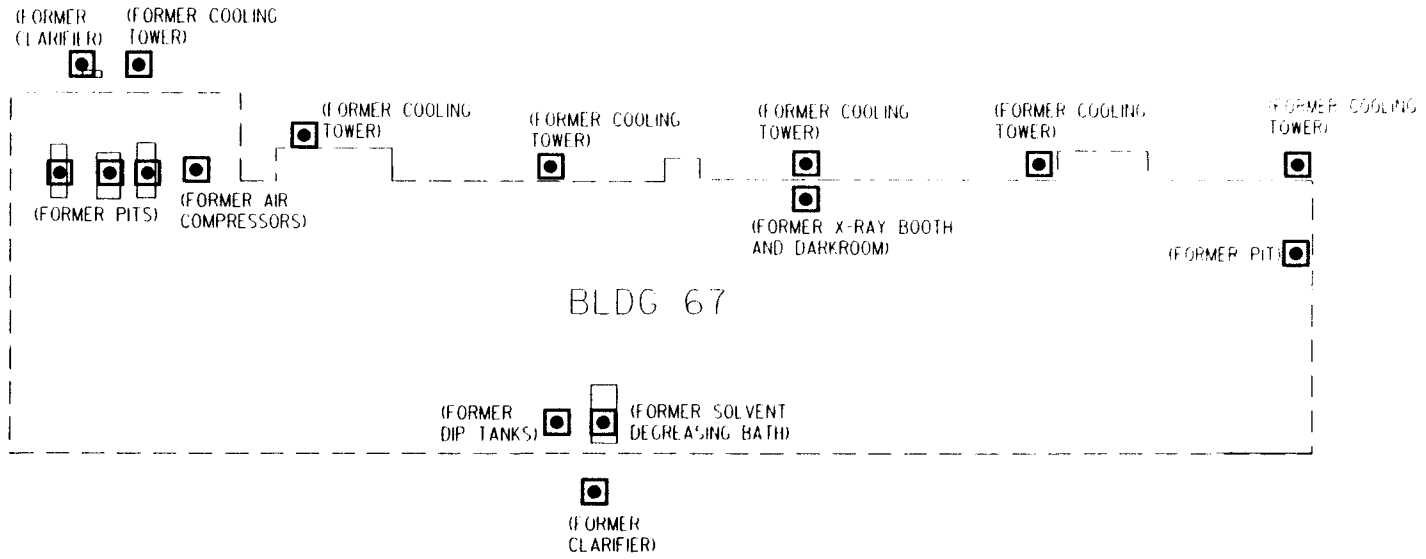
BUILDING 67 POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.13



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

0 40 80 120 160 200

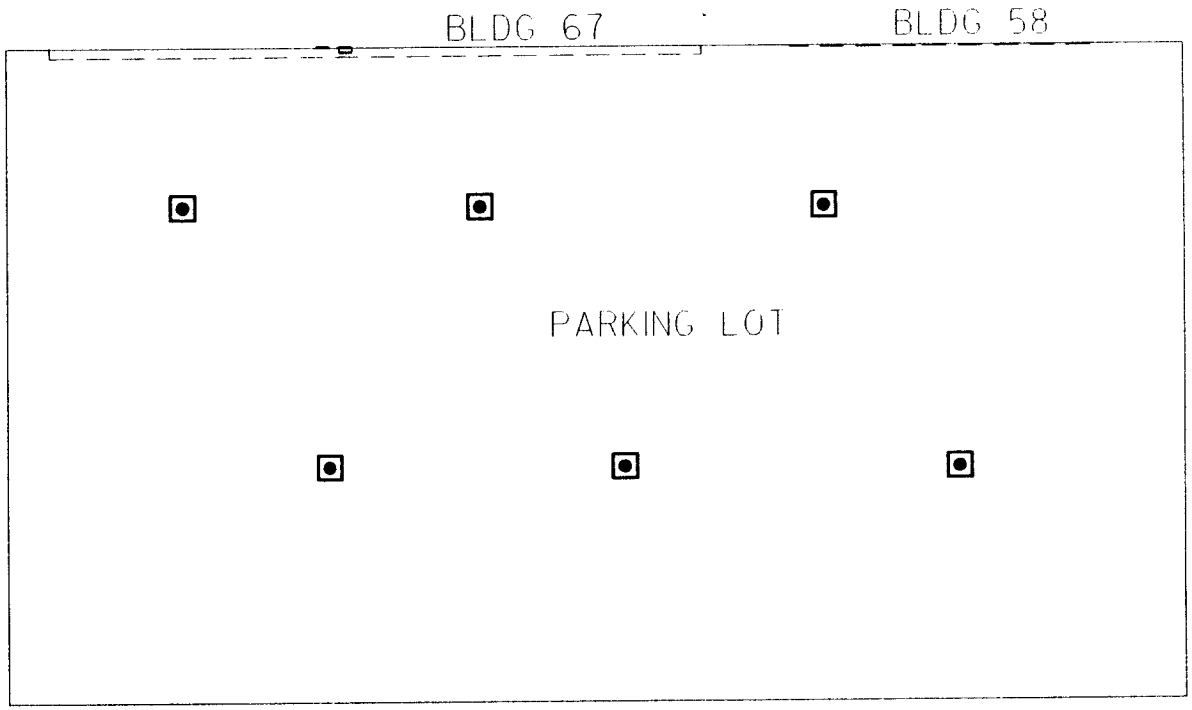
(IN FEET)

BOE-C6-0020009

MONTGOMERY WATSON

PARKING LOT POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.14



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

0 40 80 120 160 200
(IN FEET)

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.

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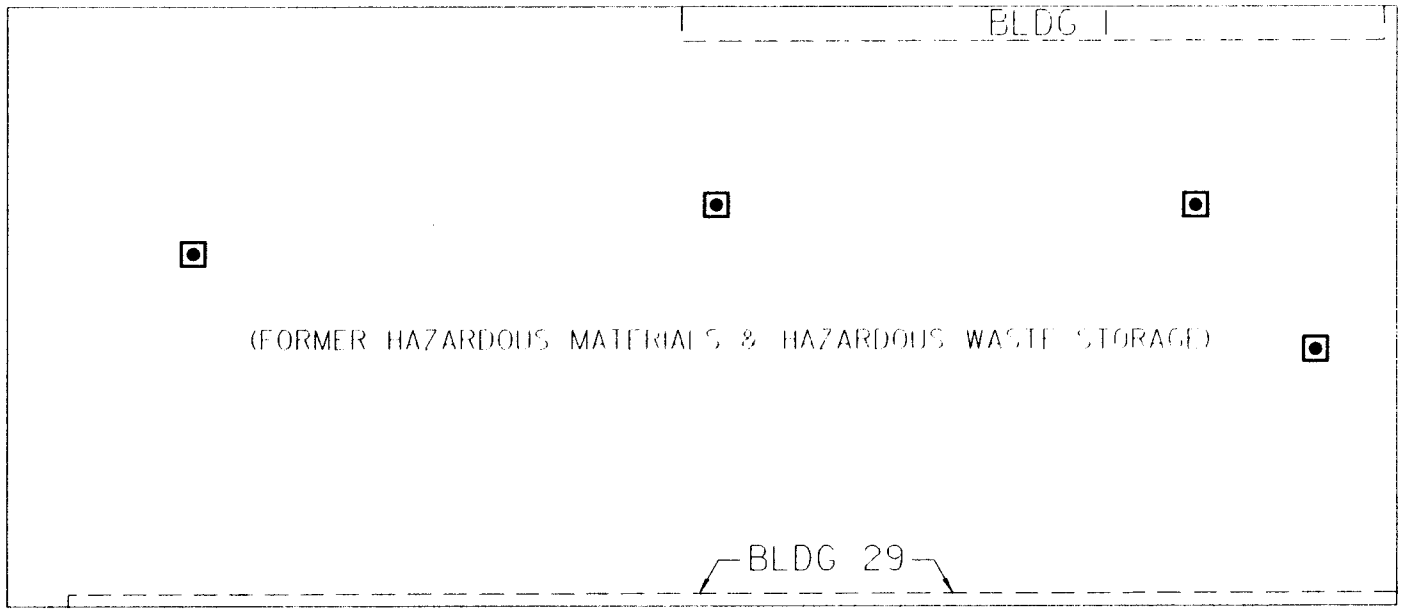
HAZARDOUS WASTE STORAGE YARD AND ACCUMULATION AREA POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.15



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION

0 40 80 120 160 200

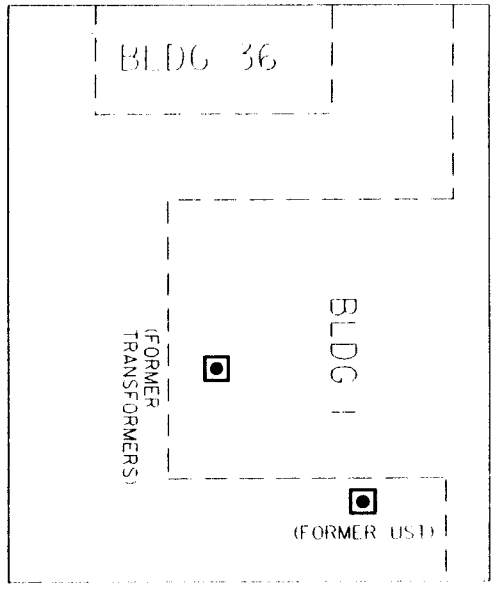
(IN FEET)

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

MONTGOMERY WATSON

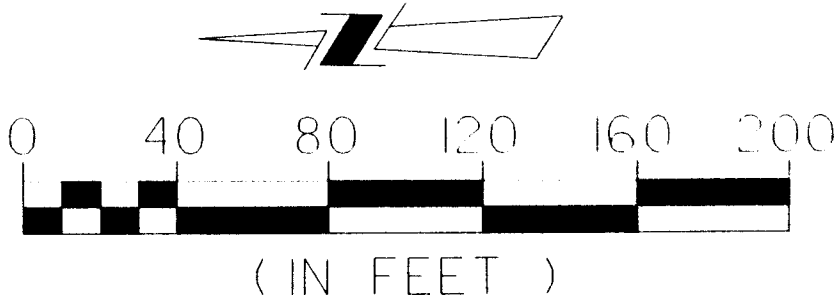
NORTHERNMOST SECTION OF BUILDING 1 POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.16



LEGEND:

⊡ PROPOSED SOIL BORING LOCATION



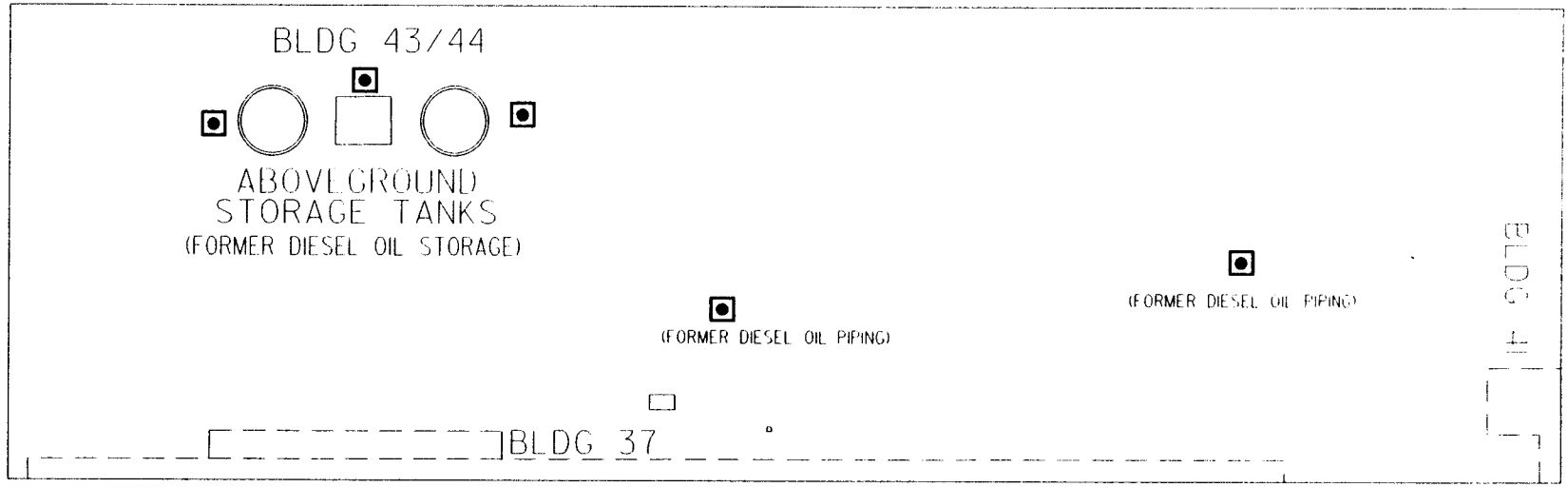
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020012

MONTGOMERY WATSON

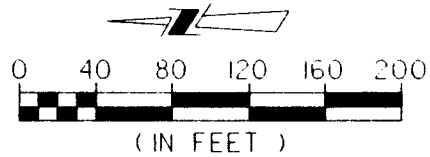
5,000-BARREL ABOVEGROUND STORAGE TANKS AND BUILDING 43/44 POINT SOURCE CONFIRMATION SOIL BORING LOCATIONS

FIG.17



LEGEND:

▣ PROPOSED SOIL BORING LOCATION



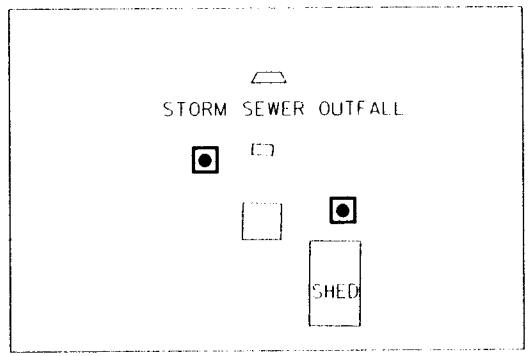
BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

BOE-C6-0020013

MONTGOMERY WATSON

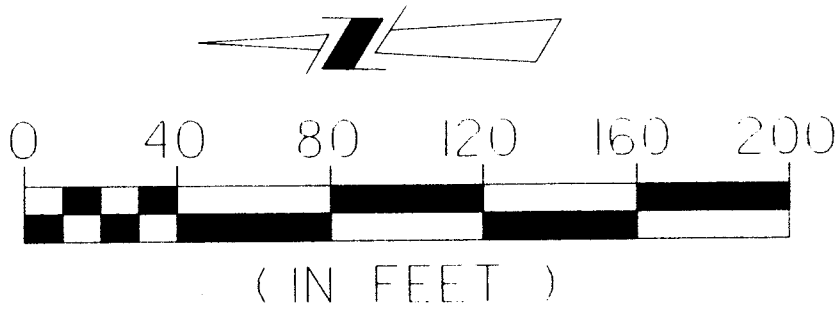
FACILITY STORM SEWER
OUTFALL POINT SOURCE
CONFIRMATION SOIL BORING LOCATIONS

FIG.18

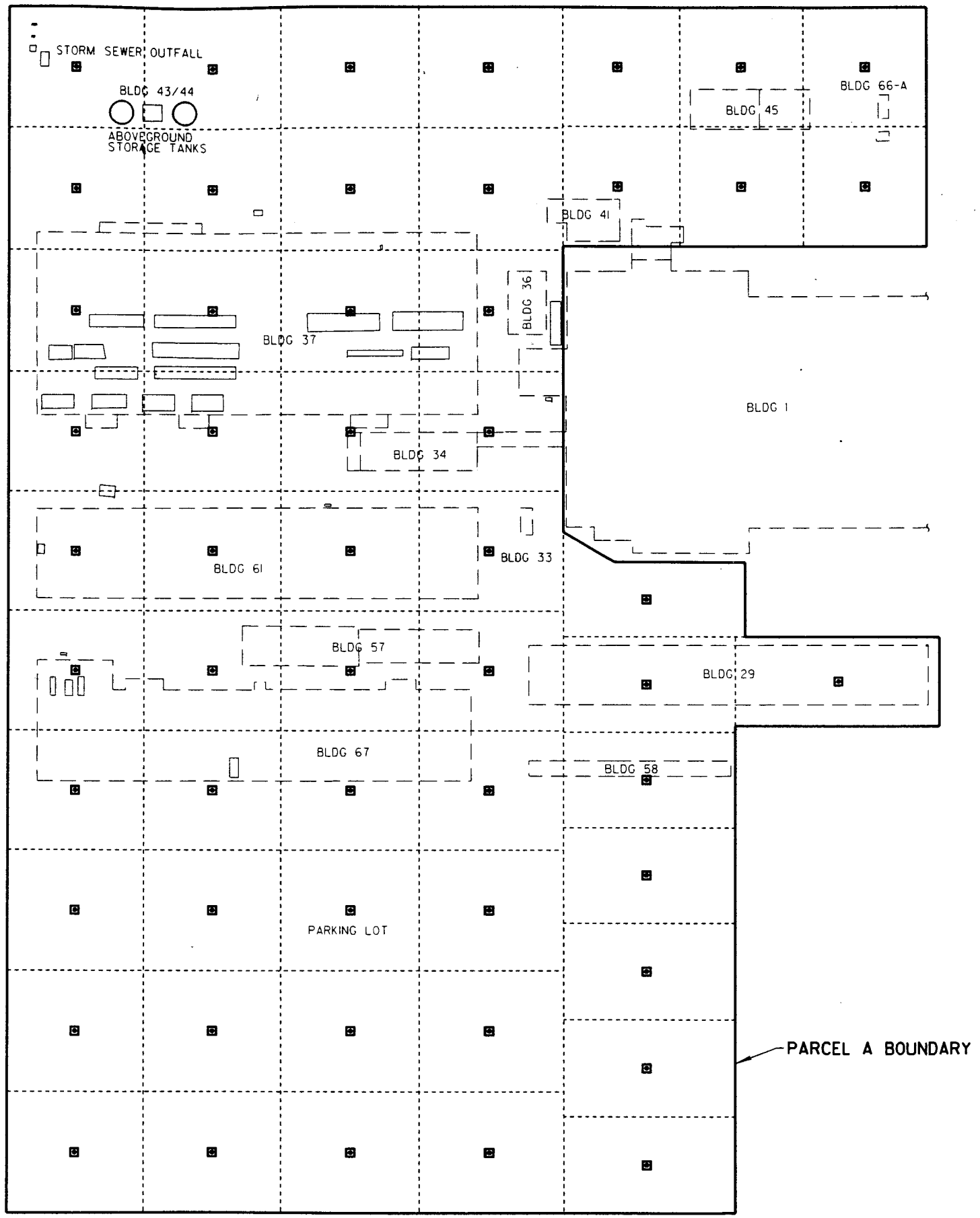


LEGEND:

⊙ PROPOSED SOIL BORING LOCATION



BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC.
SURVEY DRAWING DATED 10/22/96.



LEGEND:

⊞ PROPOSED SOIL BORING LOCATION

0 40 80 120 160 200
(IN FEET)

BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

JOB No. • FILE No. •

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

DESIGNED
DRAWN N. CHRAKIAN
CHECKED S. REINERS

SUBMITTED
PROJECT ENGINEER R. C. E. NO. DATE
RECOMMENDED
MONTGOMERY WATSON R. C. E. NO. DATE

MONTGOMERY WATSON
Pasadena, California

APPROVED 2/5/97 DATE
APPROVED DATE

MCDONNELL DOUGLAS C-6 FACILITY
PARCEL A
SITE-WIDE ASSURANCE SOIL BORING LOCATIONS

SHEET FIG. 19 OF • SHEETS

BOE-C6-0020015